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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,991	05/26/2006	Shigeki Satou	890050.542USPC	7056

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EXAMINER	
NGUYEN, KHANH TUAN	

ART UNIT	PAPER NUMBER
1751	

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08/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,991	SATOU ET AL.	
	Examiner	Art Unit	
	Khanh T. Nguyen	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The preliminary amendment filed on 05/26/2006 is entered and acknowledged by the Examiner. Claims 1-10 are currently pending in the instant application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 05/26/2006 has been regarded by Examiner and made of record in the application file.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 10/582,994. Although the conflicting claims are not identical, they are not patentably distinct from each other because both Applications contain identical paste composition comprising of acrylic resin, butyral resin and solvent with acrylic system resin having average molecular weight equal to or larger than 450,000 and equal or smaller than 900,00 with an acid value of equal to or larger than 5 mg KOH/g and equal or smaller than 25 mg KOH/g.

7. Claims 4-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5-18 of copending Application No. 10/580,749. Although the conflicting claims are not identical,

they are not patentably distinct from each other because both Applications contain the method of manufacturing a conductive paste comprising of acrylic resin, butyral resin and a solvent selected from a group consisting of limonene, alpha- terpinyl acetate, l-dihydrocarvyl acetate, l-menthone, l-perillyl acetate, l-carvyl acetate, and d-dihydrocarvyl acetate that is printed onto a ceramic green sheet to form the electrode layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4- 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4- 6 are indefinite because a step of printing a dielectric paste on the ceramic green sheet in a predetermined pattern or complementary pattern is not definite by the claimed invention. The Examiner is unclear to the meaning of "predetermined pattern " and "complementary pattern." To expedite the prosecution of the instant claims, the Examiner construe the claims to read as "a step of printing a dielectric paste on the ceramic green sheet in a pattern." Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Banba et al. (U.S Pub. 2006/0199883 hereinafter, "Banba").

With respect to claims 1-3, Banba discloses a method of forming dielectric layer wherein a paste comprising of acrylate-based resin and a solvent is applied onto a support film to form a film-forming material layer [0003]. Banba further discloses the preferred binder is methylacrylic resin with weight-average molecular weight of 50,000 to 500,000 and has an acid value of 0.5 to 5 KOH mg/g [0012]. The solvent maybe terpineol, dihdyrol-alpha-terpineol, dihydro-alpha-terpinyl acetate, turpentine oil, isopropyl alcohol or the mixture thereof [0040]. The reference specifically or inherently meets each of the claimed limitations. The reference is anticipatory.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banba (U.S Pub. 2006/0199883) as applied to the above claims, and further in view of Nishide et al. (U.S Pub. 2002/0155264 hereinafter, "Nishide").

Banba is relied upon as set forth above. With respect to claims 4-6, Banba does not explicitly disclose said dielectric paste printed onto a ceramic green sheet containing a butyral system resin as a binder from an electrode layer.

In the same field of endeavor, Nishide discloses a conductive paste for screen-printing comprising of acrylic resin or butyral resin dissolved in a terpineol or isopropyl alcohol [0084-0085]. Nishide also discloses a step of screen-printing the conductive paste in a predetermined base green layer forming a conductive paste body [0086-0087]. Nishide further discloses laminating a first test green layer containing a low-temperature sinterable ceramic material and a second test green layer containing inorganic particles [0103]. The low-temperature sinterable ceramic material contains polyvinyl butyral as a binder [0105]. The slurry of a second test green layer is form by coating onto the first test green layer and then drying the slurry to form the coating [0106].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have had used the dielectric paste, as taught by Banba, with the method of forming a green laminate body for electronic device (e.g. electrode) with a conductive paste, as taught by Nishide. All the claimed elements were known in the prior art and the one skilled in the art could have combined the elements as claimed by the know methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The burden is upon the applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

Regarding claims 7 and 8, Banba further discloses a method of forming dielectric layer wherein a paste comprising methylacrylic resin binder with weight-average molecular weight of 50,000 to 500,000 and has an acid value of 0.5 to 5 KOH mg/g and a solvent such as terpineol, dihdyrol-alpha-terpineol, dihydro-alpha-terpinyl acetate, turpentine oil, isopropyl alcohol or the mixture thereof ([0003], [0012] and [0040]).

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banba (U.S Pub. 2006/0199883) in view of Nishide (U.S Pub. 2002/0155264) as applied to the above claims, and further in view of Kobayashi (JP Pub. 09-124771 hereinafter, "Kobayashi").

Banba and Nishide are relied upon as set forth above. With respect to instant claims 9 and 10, Banba and Nishide does not explicitly disclose the degree of polymerization of the butyral system resin.

In the same field of endeavor, Kobayashi discloses a butyral system resin consisting of polyvinyl butyral having a degree pf polymerization of 1,500 to 2,500, a degree of butyralization of at least 65 mol% (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have had used the butyral system resin, as taught by Banba in view of Nishide further in view of Kobayashi, to improve storage stability and stability of connection resistance.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh T. Nguyen whose telephone number is (571) 272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ktn/

KTN
07/30/2007

/Lorna M. Douyon/
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PRIMARY EXAMINER